UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,453	03/06/2002	Jafar Hadian	3123-427 / 20011.05	8757

7590 09/09/2005

The Law Office of Steven G. Roeder
5560 Chelsea Avenue
La Jolla, CA 92037

EXAMINER	
DAVIS, DAVID DONALD	

ART UNIT	PAPER NUMBER
2652	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/092,453	HADIAN ET AL.	
	Examiner	Art Unit	
	David D. Davis	2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *98-138* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *98-138* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 98-138 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boismier et al (US 6,501,625) in view of Fraunhofer-Ges (DE 3844669). Boismier et al shows in figure 4 a disk drive including a drive housing; a storage disk 160 coupled to the drive housing; and a head arm assembly 152 coupled to the drive housing. As shown in figure 1A, the head arm assembly 152 includes an adjuster 200 and a slider 156 coupled to the adjuster 200. The adjuster 200 includes a first layer 202 and an adjacent second layer 204, which is secured to the first layer 202. Boismier shows in figure 4 that the head arm assembly 152 includes a load beam, and the adjuster 200 is incorporated as part of the load beam. Boismier et al also shows in figure 1A a second adjuster 200 that adjusts the gram load that is applied to the slider 156, and wherein the

head arm assembly 152 includes an arm beam 24, and the second adjuster 200 is incorporated as part of the arm beam 24. Boismer et al shows in figure 1A a thickness of the first layer 202 that is approximately the same as a thickness of the second layer 204.

Boismier et al is silent, however, the first layer having a first composition with a first material property, and the second layer having a second composition with a second material property that is different from the first material property with the adjuster applying a gram load to the slider that at least partially depends upon the temperature of the layers.

Boismier et al is also silent as to the first layer having a coefficient of thermal expansion that is at least approximately 25% greater than a coefficient of thermal expansion of the second layer, and the first layer having a modulus of elasticity that is different from a modulus of elasticity of the second layer. Additionally, Boismier et al is silent as to each layer being formed from a different composition of metal, and a thickness of the first layer being different from a thickness of the second layer.

Fraunhofer-Ges shows discloses a first layer having a first composition with a first material property, and a second layer having a second composition with a second material property that is different from the first material property. Fraunhofer-Ges also discloses an adjuster applying a gram load to the slider that at least partially depends upon the temperature of the layers (i.e. non-electrically actuated). Fraunhofer-Ges additionally discloses that the first layer has a coefficient of thermal expansion that is different from a coefficient of thermal expansion of the second layer.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the first layer of Boismier et al having a first composition with a

first material property, and the second layer of Boismier et al having a second composition with a second material property that is different from the first material property with the adjuster applying a gram load to the slider that at least partially depends upon the temperature of the layers as taught and suggested by Fraunhofer-Ges. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to having a first composition with a first material property, and the second layer having a second composition with a second material property that is different from the first material property because the two sets of layers are art-recognized equivalents and "the gram load of the head suspension assembly 152 can be changed real-time with changing drive conditions" (e.g. ambient temperature). See lines 60-63 of column 5 and lines 2-4 of column 6 of Boismier et al.

It also would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the first layer of Boismier with a coefficient of thermal expansion that is at least approximately 25% greater than a coefficient of thermal expansion of the second layer and having a modulus of elasticity that is different from a modulus of elasticity of the second layer or have each layer being formed from a different composition of metal, and a thickness of the first layer being different from a thickness of the second layer as suggested by Fraunhofer-Ges.

The rationale is as follows: the purpose of the layers is to adjust the gram load. The layers need not have a specific coefficient of expansion, a specific modulus of elasticity, a specific thickness or specific material such as metal to adjust the gram load. Realizing this one of ordinary skill in the art at the time the invention was made would have been motivated to provide a first layer having a coefficient of thermal expansion that is at least approximately 25%

greater than a coefficient of thermal expansion of the second layer, a modulus of elasticity that is different from a modulus of elasticity of the second layer or have each layer being formed from a different composition of metal, and a thickness of the first layer being different from a thickness of the second layer, which is well within the purview of a skilled artisan and absent an unobvious result, so as to have optimal materials, readily available for the procurement process during manufacturing, for the best adjustment of the slider, for applying a gram load during the operation of the disk drive.

Response to Arguments

4. Applicant's arguments filed June 24, 2005 have been fully considered but they are not persuasive. Applicant's verbose remarks contain well-thought-out statements; however, the comments are not germane to the claimed invention nor do the correlate the rejection supra. Nonetheless, Applicant asserts in the first full paragraph on page 10 the following:

> The piezoelectric actuator 162 in Figure 4 (or any other Figure) is not incorporated as part of the arm beam or the actuator arm, but in every case is secured to the load beam 24, 154.

Whether or not the statement is an accurate characterization of the applied prior art, the claimed invention, with respect to exemplary claims 98 & 110 since applicant has not reference any claims specifically, does not either require an arm beam, actuator arm or load beam.

Applicant asserts in the antepenultimate line through the ultimate line of the third full paragraph on page 10 the following: "it is unreasonable to assume Boismier et al. is teaching that the piezoelectric actuator is being used for the purpose of solving an unacknowledged problem". It should be noted that the claims are not anticipated by Boismier et al, but obvious

over Boismier et al and Fraunhofer-Ges. Therefore, again, applicant's assertion is not germane to the rejection of the claimed invention.

> On page 11, in the first full paragraph applicant maintains the following:
>
> Fraunhofer-Ges clearly states that the thermal energy necessary for the operation may be supplied electrically using an electrical supply, or optically using a bundled light beam (Col. 2, lines 13-18). It is well known that a bundled light beam similarly requires an electrical supply to increase the temperature of the adjuster.

First, Fraunhofer-Ges does not state, as suggested by applicant, that an optical beam requires an electrically supply. Some optical beams do, but not all. Second, assuming arguendo an optical beam did require an electrical supply, the claims that require a limitation regarding electrically supply specifically state "a non-electrically actuated adjuster". Thermal energy and optical beams are actuated the adjuster not an electrical supply. An electrical supply is just that, supplying electricity to the actuator.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Davis whose telephone number is 571-272-7572. The examiner can normally be reached on Monday thru Friday between 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David D. Davis
Primary Examiner
Art Unit 2652

ddd